

REMARKS

General Remarks

Applicant has carefully studied the outstanding Office Action in the present application. The present amendment is intended to be fully responsive to all points of rejection raised by the Examiner in the Office Action mailed September 19, 2005, and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of all claims under consideration is respectfully requested.

Claims 1 - 18 and 23 are pending in the application. Claims 1 – 4, 6, 9, 12, 13, and 17 are currently amended with the self-explanatory amendments seen above. No impermissible new matter has been added.

Prior Art Rejections

Claims 1 – 13, 17-18 and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Luke et al. (U.S. 5,483,603) in view of Masami (JP 05-299794). Claims 14 - 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Luke et al. (U.S. 5,483,603) in view of Masami (JP 05-299794) and further in view of Brecher et al. (5,544,256).

Applicants respectfully traverse the above rejections as applied to each rejected claim.

Luke et al. describes a system and method for automatic optical inspection that distinguishes between wire and substrate, and notes that the inspection of copper oxide is not easy. Masami describes a printed circuit board and manufacturing method that employs an identification mark having an oxide film formed thereon. Brecher et al. describes an automated defect classification system.

Claim 1 has been amended to recite:

generating a pixelated image of the printed circuit board, said printed circuit board comprising a laminate and a plurality of metal conductors; and

determining whether an oxidized metal is present on a conductor from an analysis of the image.

Nothing in Luke et al., alone or in combination with any of the other cited prior art, shows or suggests determining whether an oxidized metal is present on a conductor from an analysis of an image. As noted above, Luke et al. describes a system and method for automatic optical inspection, and indicates that the inspection of inspection of copper oxide is not easy. Although Luke overcomes inspection difficulties by using an RGB video camera, nothing in Luke shows or suggests anything beyond differentiating between wires (which may or may not be oxidized) and substrate.

There is nothing in Masami to remedy the deficiencies of Luke et al. since Masami forms an oxide film on identification marks to make the marks distinguishable relative to components due to a sufficient contrast between the color of the component and color of the mark (*see paragraph [0020]*).

In both Luke et al. and Masami, means are provided that are capable of detecting oxide. Nothing, however, even remotely suggests that this capability be used for determining whether an oxidized metal is present on a conductor as required by claim 1. In Luke et al. the improved detection capability is used to distinguish between wires and substrate, while in Masami the capability to detect oxide is used to distinguish between oxidized marks and components that are not part of the oxidized mark.

Furthermore, Applicant respectfully points out that Brecher likewise fails to compensate for the above-identified deficiencies of Luke et al. and Masami vis-à-vis independent claim 1. Even taken for what they would have meant as a whole to an artisan of ordinary skill, the combined teachings of these three references would not have (and could not have) led the artisan of ordinary skill to the subject matter of independent claim 1, much less its respective dependent claims.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLICATION NO. 09/762,945
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For the foregoing reasons, Applicant respectfully requests the Examiner to withdraw the rejection of claim 1, and its dependent claims 2 – 18 and 23, which are patentable at least by virtue of their dependency from claim 1.

Conclusion and request for telephone interview.

In view of the foregoing, this application is believed to be in order. Reconsideration and allowance of this application are respectfully solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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